Course

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🏠 CS-E4730
📖 Course materials
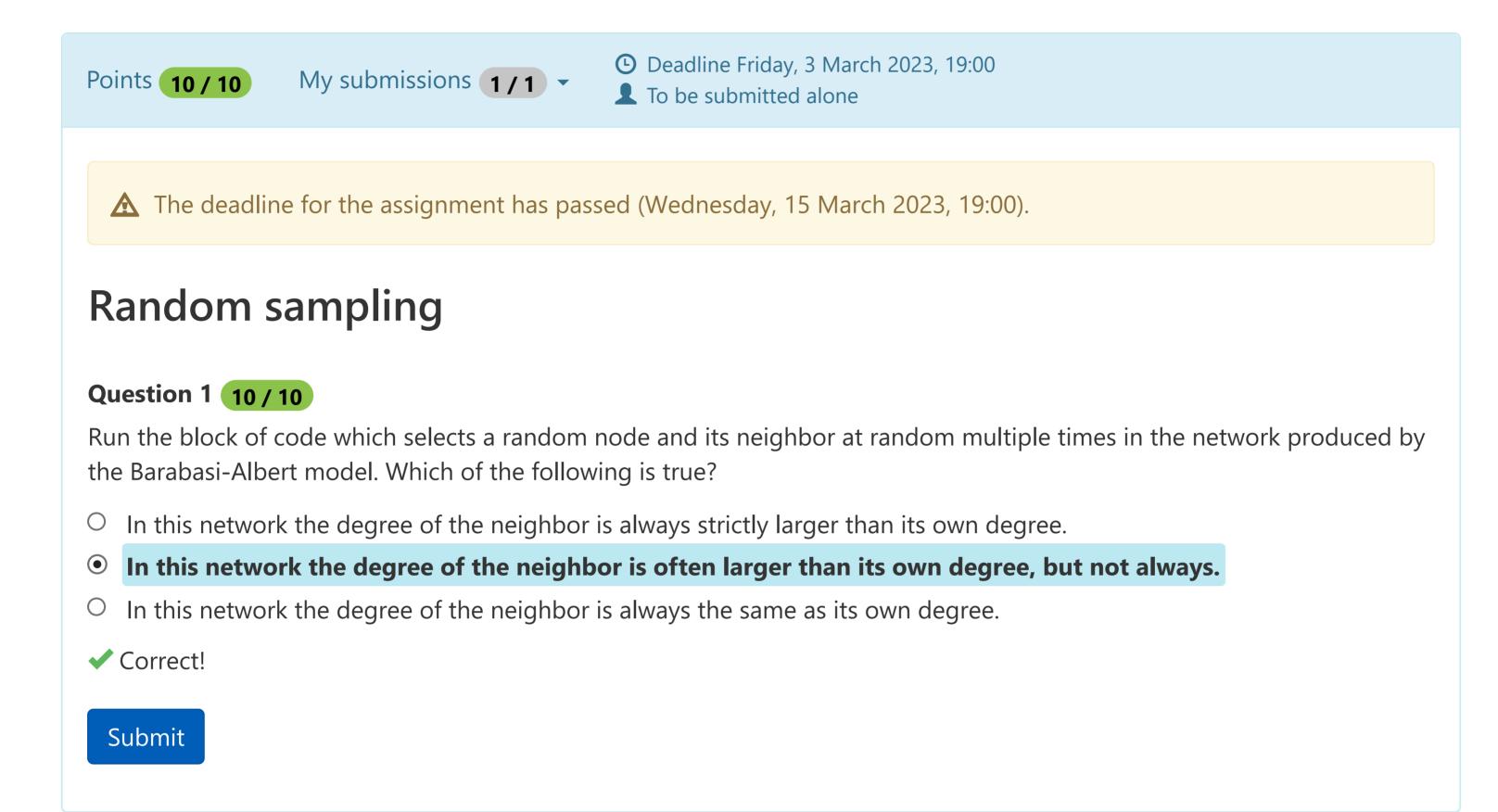📊 Your points

Exercise questions

In this exercise you will answer questions related to the programming exercise. The purpose of these questions is to make you think a bit about the computations you have just done. This will be a pattern that is repeated in every round of the course: There will be a small programming task followed by a questionaire.

Note that you can submit the answer to each question only once. The questions are designed to be easy if you have gone through the notebook. Note that the questions can vary slightly between students.

Points **10 / 10**   My submissions **1 / 1** ▾   ⏰ Deadline Friday, 3 March 2023, 19:00
👤 To be submitted alone

⚠️ The deadline for the assignment has passed (Wednesday, 15 March 2023, 19:00).

Random sampling

Question 1 **10 / 10**

Run the block of code which selects a random node and its neighbor at random multiple times in the network produced by the Barabasi-Albert model. Which of the following is true?

○ In this network the degree of the neighbor is always strictly larger than its own degree.

◉ **In this network the degree of the neighbor is often larger than its own degree, but not always.**

○ In this network the degree of the neighbor is always the same as its own degree.

✔ Correct!

[Submit]

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Systematic analysis

Question 1 **10 / 10**

Answer this question after completing the programming task and going through the notebook. What do you find after computing the average neighbor degree, average degree and the fraction of nodes with lower degree than their neighbors for the two networks (Barabasi-Albert and the network with degrees 1 to 100)?

○ The average neighbor degree is higher than the average degree only in the Barabasi-Albert network, but for both of them the number of nodes with higher average neighbhor degree than their own degree is more than 50%. The relative difference is larger in the Barabasi-Albert network and the friendship paradox is stronger (i.e., more nodes with neighbor degree higher than their own degree), because it has more degree heterogeneity.

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[Submit]

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